

## **CLAIMS**

What is claimed is

1. A thermal reservoir for a two-pipe hydronic air-conditioning system which said two-pipe hydronic air-conditioning system contains a means to heat water, means to chill  
5 water, a volume of hot or cold water, a pump to circulate said hot or cold water about a piping loop containing a supply line and a return line and a plurality of water-to-air heat exchangers connected to said supply line and to said return line of said loop, comprising:

a. tank means for storing a volume of hot water in a first portion thereof and cold water in a second portion thereof;

10 b. first valve means connecting said first portion of said tank to said supply line of said two-pipe hydronic air-conditioning system, second valve means connecting said first portion of said tank to said return line of said two-pipe hydronic air-conditioning system, third valve means connecting said second portion of said tank to said first portion of said tank to said supply line of said two-pipe hydroponic air-conditioning system, and  
15 fourth valve means connecting said second portion of said tank to said first portion of said tank to said return line of said two-pipe hydroponic air-conditioning system.

2. The thermal reservoir of Claim 1 wherein said tank means is comprised of a cylindrically shaped tank having a first end, a second end, a longitude disposed therebetween, and a piston movably disposed along said longitude of said tank.

20 3. The thermal reservoir of Claim 2 wherein said thermal reservoir is comprised of a plurality of tanks fluidly connected in parallel, each of which said tanks is cylindrically shaped, has a first end, a second end, a longitude disposed therebetween and a piston movably disposed along said longitude thereof.

4. The thermal reservoir of Claim 1 wherein said tank means is divided into said first  
25 and second portions thereof by an elastic membrane.

5. The thermal reservoir of Claim 1 wherein said tank means is comprised of a first tank which is dedicated to receiving and discharge of hot water and a second tank which is dedicated to receiving and discharge of cold water.

6. The thermal reservoir of Claim 1 wherein said thermal reservoir is fluidly connected in parallel with said means to heat and means to chill water of said two-pipe hydronic air-conditioning system.

7. The thermal reservoir of Claim 2 wherein said thermal reservoir is fluidly connected in parallel with said means to heat and means to chill water of said two-pipe hydronic air-conditioning system.

8. The thermal reservoir of Claim 3 wherein said thermal reservoir is fluidly connected in parallel with said means to heat and means to chill water of said two-pipe hydronic air-conditioning system.

9. The thermal reservoir of Claim 4 wherein said thermal reservoir is fluidly connected in parallel with said means to heat and means to chill water of said two-pipe hydronic air-conditioning system.

10. The thermal reservoir of Claim 5 wherein said thermal reservoir is fluidly connected in parallel with said means to heat and means to chill water of said two-pipe hydronic air-conditioning system.

11. The thermal reservoir of Claim 1 wherein said thermal reservoir is fluidly connected in series with a portion of said supply line of said two-pipe hydronic air-conditioning system.

12. The thermal reservoir of Claim 2 wherein said thermal reservoir is fluidly connected in series with a portion of said supply line of said two-pipe hydronic air-conditioning system.

13. The thermal reservoir of Claim 3 wherein said thermal reservoir is fluidly connected

in series with a portion of said supply line of said two-pipe hydronic air-conditioning system.

14. The thermal reservoir of Claim 4 wherein said thermal reservoir is fluidly connected in series with a portion of said supply line of said two-pipe hydronic air-conditioning system.

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15. The thermal reservoir of Claim 5 wherein said thermal reservoir is fluidly connected in series with a portion of said supply line of said two-pipe hydronic air-conditioning system.